

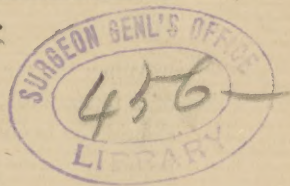
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REPORT OF PROGRESS IN THE TREATMENT OF THORACIC ABSCESS.

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IN abscesses of the parenchymatous structure of the lungs which do not find an outlet into the bronchial tubes, it has been proposed to boldly thrust a trocar through the intercostal space nearest the accumulation and draw off the purulent collection. And those who are familiar with the pretension of Dr. Green, of New York, many years ago, will remember that he claimed to pass tubes into the cavities remaining after abscesses of the lungs had discharged their contents by the mouth. He certainly believed that this was accomplished, and solutions of nitrate of silver were injected through a tube which entered the rima glottis and descended in the trachea to the bifurcation of the bronchia, taking, as he claimed, that direction in which the cavity was located.

There does not seem to be any greater antecedent improbability of this being effected than in the catheterization of the ureters, and there is no longer any doubt as to the latter having been done of late by several operators whose good faith cannot be questioned.

It is known that abscesses of the liver find their way through the diaphragm and through adhesions of the lung to this membrane and enter the bronchial tubes, discharging the pus with the expectoration.

I have verified this by an autopsy, of which a report was published in *Gaillard's Journal* eight years ago. If the measures adopted by Green were practicable in a case of this

kind, antiseptic washes might be employed to cleanse the track of such a purulent discharge through the lungs.

In connection with the treatment of pulmonary abscesses, Drs. Spillman and Haushalter present some points of practical importance in the *Revue de Thérapeutique*, February 15, 1889:

When the diagnosis of an abscess is made during the course of a pneumonia, all methods of interference are to be avoided; should the pneumonia be cured and the abscess still persist, then intervention may lead to a rapid recovery, or at all events prevent grave accidents from the opening of the abscess into the adjacent structures.

Before opening the abscess it would be well to provoke or bring about plural adhesions, if the same do not already exist.

To find the abscess, the best mode of procedure would seem to be costal resection and the opening of the lung with the thermocautery.

Assist by means of tubes the thorough drainage of septic secretions, discard all antiseptic washings and use instead dry dressings.

It is inferred that the authors intend in the last paragraph to interdict all irrigation of lung cavities:

A case of pulmonary abscess in a child four years old was seen by Dr. Hüber after he had been sick five weeks with what was called pleuro-pneumonia. During this time he presented high temperature, irregular chills, diarrhoea and sweating.

An exploratory puncture revealed pus, and a drainage-tube was introduced. He supposed that in passing through the pleura, the distance was half an inch.

Four cases of abscess of the lung from broncho-pneumonia are recorded by Dr. Bouroset in the *Lyon Médical*, July 7, 1889. He draws the following conclusions from these cases:

Epidemic bronchitis is sometimes complicated with broncho-pneumonia; such broncho-pneumonia is more common than is generally believed; it terminates in certain cases by suppuration, and the formation of true abscesses; such abscesses are generally

multiple, scattered through one or both lungs; the purulent collection may, however, be single, superficial and voluminous, and therefore accessible to surgical interference. (*Medical Chronicle*, October, 1889.)

A case of abscess of the lung with paracentesis and recovery under the care of Prideaux Selby is reported in the *British Medical Journal*, October 5, 1889 :

A carpenter, aged twenty-six, was examined with pain in the right side and history of a blow, a week before. A cough developed, with purulent, slightly fetid expectoration. An exploring needle was introduced in the mid-axillary line with a negative result. This was repeated at a point three inches further back, with a like result. An aspirating trocar was introduced subsequently to a depth of between two and three inches and about five ounces of thick, intensely fetid pus was drawn off. On the following day an inch and a half of the fifth rib was excised, but no pus was found in the pleural cavity and it was evident the pus had come from the lung itself. The wound was closed, the fetid expectoration cured, and patient recovered.

A case of double pneumonia followed by abscess of left lung, resulting in recovery, is reported by Dr. James Y. Lewis in the *Weekly Medical Review*, August 10, 1889 :

The patient, aged fifty, was found in a severe attack of syncope, followed by pneumonia confined to lower lobe of right lung. The left lung was afterward involved, leaving a spot as large as a man's hand in the left with consolidation. At this time there developed hectic fever, night-sweats, with sharp and continuous pain confined to this circumscribed area. The temperature was now 99° in the morning and 103° in the evening, and pulse of 110 beats until the rupture of the abscess into the bronchi, from which the pus was expectorated. From this time a slow but sure convalescence was established.

A case of tubercular abscess of the lungs is reported by Dr. Ashley Cummins in the *British Medical Journal*, January 26, 1889, which he treated by incision, evacuating about three ounces of extremely fetid pus by an opening between

the seventh and eighth ribs. The patient left the hospital greatly improved in health.

In the treatment of a case at the Prince Alfred Hospital under Dr. Alfred Shewen, two inches of a rib just below the angle of the scapula was removed and about three-quarters of a pint of thickish, dark-gray, non-fetid pus escaped from the cavity, which seemed to be in the lung-substance. Two large drainage-tubes were inserted and on the day after the operation the cavity was washed out with a solution of iodine about the color of healthy urine. A week later there was profuse discharge of blood-stained, slate-colored, fetid pus. Tasted iodine on washing out cavity, and continued to taste it at each washing. Patient made an uninterrupted recovery. (*Australian Medical Gazette*, April, 1889.)

Another patient, under the same physician, offered some points of peculiar interest and the attendant was quite certain that he had to deal with a genuine case of gangrene of the lung. An exploring needle between the ninth and tenth ribs at the angle of the scapula gave a stinking pus. Two days afterward, about two inches of the ninth rib, just below the angle of the scapula, was removed. About a pint of horribly stinking pus was evacuated, and when the cavity was explored by the finger, hard resistant bands with ragged uneven walls could be felt. There was very little blowing in and out of the opening on respiration. An attempt was made to slowly irrigate the cavity by means of lukewarm boro-glyceride, but the patient became very blue and the pulse failed, so the attempt was given up. Two large drainage-tubes with a calibre of $\frac{3}{8}$ inch were left in. On the following day the cavity was syringed out with boro-glyceride, while the patient was sitting, without causing any distress. Powdered boric acid dusted into cavity. The cavity in the lung is irregularly pear-shaped with the large end inward. Air rushes in and out violently now on coughing. The expectoration and discharge are fetid; tongue dry, glazed and cracks; with temperature 102.6°. In a week afterward the cavity was much contracted, and after the lapse of another week patient got up for the first time. When wound is syringed out the fluid goes through into the patient's mouth, and hence is stopped, as it causes irritation. Subsequently it is stated that expiration

and inspiration can be carried on through the aperture in the chest, the mouth and nose being kept closed. Two months later, the rush of air in and out of the lung is shown by blowing a whistle which is placed in the opening. But he is quite well and hearty. (*Australian Medical Gazette.*)

A complicated case of pleuro-pneumonia is reported by Dr. J. Wallace Anderson, in the *Medical Press and Circular*, September 4, 1889:

When seen, on the third morning of his illness, the patient looked like a man who had been suddenly attacked by an acute inflammatory fever—flushed face, pulse 100, respiration 24, and temperature 103.8° , with restlessness. Well-marked dulness was found over the left base behind, extending upward to about the inferior angle of the scapula. By the eighth day of illness the dulness had extended to the upper half of the left front of the chest with suppressed respiratory murmur. During the next four weeks the sweating gradually ceased, the respiration fell to 20 per minute, and the temperature to an average of 100° morning and 101.5° evening. On the other hand, the dulness over the left front became still more pronounced, and reached almost to the clavicle, while posteriorly it rather diminished. A swelling was noticed on the left side of chest beneath the *pectoralis major*, and running outward and backward into the axillary region, and fluctuation is easily made out. He was operated on for an abscess behind the *pectoralis major*, and the patient's health improved. Pus collected and escaped once or twice during the next ten days, but finally the sinus closed. Subsequently, the patient's temperature rose in the evening and once reached 103.4° . A small circumscribed swelling was observed near the region of the old abscess, in the second intercostal space. Dr. Anderson aspirated without obtaining fluid, but some air escaped. A small abscess formed and burst, but the sinus soon closed, and the patient made a perfect recovery.

This brings us to the consideration of empyema, either from traumatic injuries or from other causes, and while the history of some of these cases in their early development belongs rather to a medical than to a surgical division, the

means of relief are entirely surgical. Whether a purulent collection in the pleural cavity is the result of an idiopathic inflammatory process, or ensues from a traumatic injury inflicted from without, does not in any way affect the real characteristics of it as an abscess.

The local and constitutional effects of the existing pus, in contact with a surface from which there is absorption to a greater or less extent, are too well known to require any elucidation from me.

The prime consideration in connection with this purulent reservoir is to secure its evacuation, and the next indication is the resort to measures to prevent its reproduction in the sac.

While it compresses the lung and thus renders it incapable of performing its function for the time being, a timely removal of this pressure may allow of the expansion of the pulmonary structure, so as to admit the air into the bronchial ramifications, with a fair prospect of restoring the respiration.

Dr. Ashhurst brought into the clinic at the Pennsylvania Hospital a young lad, in whom there was no history of an injury, so that the development of empyema was thought to be due entirely to a latent cause. The head of the abscess appeared to the right and an inch below the left nipple. At this point an incision was made obliquely to the ribs. The pus was allowed to be pumped out by the breathing of the patient, and a large quantity was thrown out. A second incision was made about six inches below and to the left of the first, and a drainage-tube was inserted, passing through both incisions, so as to secure a free and thorough draining off of the pus. The cavity was washed out with a solution of the bichloride of mercury. The incisions were closed with silver sutures and dressed antiseptically. The patient's temperature did not exceed 100° , and had run down to 97° . He had good appetite all the time, and had made no serious complaints, notwithstanding the extensive extravasation of pus. (*Times and Register*, August 31, 1889.)

A record by Dr. J. R. Morison of twenty consecutive cases of empyema, mostly in children, with one exception ended in recovery in a remarkably short period under surgical treatment with the use of strict Listerism. He was of the opinion that in

the great proportion of cases, the introduction of a drainage-tube without the removal of any portion of ribs was sufficient. Dr. James suggests frequently repeated aspiration, without the insertion of a tube. Dr. Hodsdon believed that the removal of a portion of the rib made the drainage easier and more effectual. (*British Medical Journal*, June 15, 1889.)

A case of empyema of the right pleura, which ruptured into and discharged itself through the lung, was reported by Dr. Shearer to the Liverpool Medical Institution, December 6, 1888 :

A man, forty years old, during a severe burst of coughing felt something give way in his side, and he coughed and brought up a half-bucketful of matter. Next day he brought up a pint and a half of matter, and the following day a couple of pints. After this the expectoration gradually diminished, and by the end of the seventh week it had entirely ceased, and he was fairly convalescent. (*Liverpool Medico-Chirurgical Journal*, January, 1889.)

An original and frank presentation of the results of four cases of empyema appears in the *Kansas City Medical Record*, for June, 1889, by Dr. Theo. Griffin: Out of this number one, a child, died before the doctor got ready to operate. The golden opportunity had been lost, and a life had been sacrificed to the sin of procrastination. Another case, of a man, about forty years old, had over a gallon of fluid, in the pus transitive state, drawn off from the pleural cavity of the right side by Flint's trocar and canula with stop-cock and Davidson's syringe attachment. But eventually he died, no doubt with his pleural cavity well filled with pus. Still another man, twenty-four years old, was aspirated twice, getting first a greenish watery fluid and afterward pus, but the cavity would not fill and was like an empty box, leading to a fatal result. The fourth case, a boy of fifteen years, had an incision between the seventh and eighth ribs, with the use of a large drainage-tube, and recovered with only a perceptible depression of the chest-wall.

A boy, twelve years old, was admitted into the Royal Southern Hospital, under the care of Dr. Alexander, with his left pleura full of pus. On June 20, 1888, eight ounces of pus were removed by the aspirator. On the following day a tube was inserted, and

the case went on with uninterrupted success until his discharge eight weeks after. The chest was observed to expand well. (*Liverpool Medico-Chirurgical Journal*, June, 1889.)

Two cases of purulent pleuritic effusion, treated by aspiration with a favorable result, are reported by Dr. James Carmichael, in the *Edinburgh Medical Journal*, August, 1889 :

One patient was a girl, aged eight years, and the signs of fluid at the base of the right chest were well marked. Two days after examination, five ounces of thick creamy pus were drawn off from the posterior part of the chest below the angle of the scapula. Four days after tapping she expectorated a quantity of muco-purulent matter with manifest alleviation, but she did not continue free from trouble. The needle was introduced anteriorly in the fourth intercostal space and two ounces of pus drawn off. The subsequent progress of the case was favorable, and she made a perfect recovery.

The other patient was a boy, aged eight years. There were well-marked signs of limited effusion, quite at the base of the right lung posteriorly, and on introducing a needle some thick curdy-looking pus was drawn off. Subsequently a needle was introduced in same situation and more pus came away. From this time the physical signs steadily improved, and the patient was dismissed with an increase of four pounds in his weight.

These two cases demonstrate the fact that purulent collections in the pleura can be got rid of effectually, although exceptionally, by aspiration alone. The author considers the spontaneous discharge of pus *per orem* as favorable to a cure, and says Trousseau long ago pointed out that this is due to ulceration of the pleura over small pneumonic areas.

Blake reports (*Lancet*, February 16, 1889) six cases of empyema, all treated by resection of a portion of a rib in children, the removal of the flaky organized lymph with a sharp spoon, and the injection of four ounces of iodoform emulsion, three ounces of which were allowed to run out again. In all the cases the wound healed within sixteen days. The author has little doubt that the iodoform emulsion materially hastened the heal-

ing process. (*American Journal of the Medical Sciences*, May, 1889.)

After failing to relieve a case of empyema by aspiration, Dr. A. M. Vance removed subperiosteally, with an ordinary bone forceps, about three inches of the eighth rib. A great deal of pus came away, much of it being in cakes, like curd. The cavity was washed out with a large quantity of warm bichloride solution, 1 to 5000. A large double drainage-tube of rubber was fastened in the wound and a complete antiseptic dressing covered all. The case progressed to a rapid recovery without one bad symptom. The external wound cicatrized by the end of the sixth week and his lung returned to its full capacity. (*American Practitioner and News*, January 19, 1889.)

The report of a case of fulminating pyo-pneumothorax in an infant of eight months, by Angel Money, affords some points worthy of attention. The breathing varied from 56 to 72 per minute, temperature 104.2°, lips pale and slightly blue, movement of alæ nasi, pulse 168. Four days afterward an exploring needle was introduced in the right lower axilla and a sanguinolent fluid withdrawn; twelve ounces were evacuated by aspiration. The relief was only temporary, and on the next day the thorax was opened, with relief to the pressure of the pneumothorax on the lung and mediastinum. On the sixth day from the onset of the disease, the brain began to fail, the anterior fontanelle sank, and the child died in the afternoon, in a state which Marshall Hall would have called "hydro-cephaloid." The necropsy found muco-pus in the tubes and small collections of pus in the periphery of the consolidated lower lobe, one being into the pleura by a widely patent fistula. (*Lancet*, August 31, 1889.)

Leclerc and Tillier record a case of death from exhaustion following empyema, in which thoracentesis had been practised with irrigation of the pleural cavity. (*Lyon Médical*, September 8, 1889.)

That the symptoms were not due to the antiseptics used is evident from the fact that they appeared immediately, before sufficient time had elapsed for absorption. This case and others illustrate the danger attendant upon irrigation of the pleural cavities; and that the practice of washing out the emptied

pleural cavity is unnecessary, the statistics of Bowditch demonstrate very clearly. (*Medical News*, October 19, 1889.)

In referring to irrigation in a case of empyema, Dr. H. B. Swartwout notes a fact of considerable importance. On washing out this patient with a carbolic acid solution, the acid was immediately tasted by him in the expired air and in the mucus raised from the lung. This is not always the case, and may have some bearing on his susceptibility to poisoning. (*N. Y. Med. Journal*, October 6, 1889.)

In a case of pyo-pneumothorax, operated upon by Dr. A. L. Mason, in a man forty-five years old, an interesting and dangerous complication occurred during the irrigation of the pleura. As the secretion was foul, the cavity was washed with a warm carbolized solution 1 to 100, when the patient became unconscious and the breathing nearly ceased, the patient being cyanotic, with general convulsions and dilated pupils. But there was no recurrence of these troubles upon subsequent washings. (*Boston Medical and Surgical Journal*, November 4, 1889.)

In further illustration of the benefit to be derived from washing out lung cavities, a case at the Devon and Exeter Hospital under the care of J. Delpratt Harris may be cited :

A gentleman, aged thirty-three, developed symptoms of renal abscess, which was drained and syringed with disinfecting lotions. The pulmonary pleura became affected, as was supposed, from propinquity of the abscess walls, and the free expectoration of putrid material seemed to poison him. An operation being advisable, the aspirating needle was plunged in to a depth of three or four inches, and matter flowed freely through the tube. The tissues were now cut through down to the pleura; this was opened and found adherent to the pulmonary pleura. A scalpel was thrust into the lung and the discharge of pus was abundant. The cavity was daily syringed out with a weak solution of carbolic acid until the fetor was corrected, when Sanitas fluid was used mixed with warm water. A drainage-tube was kept in for a month, when a rubber tracheotomy tube was substituted. At the end of another month the tube was removed and all discharge ceased, with prompt recovery. (*British Medical Journal*, May, 1889.)

Several cases of empyema were reported by Dr. Kingdom to the Nottingham Medico-Chirurgical Society, February 21, 1889, which had been cured by free drainage and irrigation. (*British Medical Journal*, March 2, 1889.)

In the treatment of purulent pleurisy by puncture frequently repeated, the following rules have been laid down by Desplats in the *Journal des Sciences Médicales de Lille*:

(1) When you suspect a purulent exudation, immediately make exploratory puncture. This is the only means of being certain. (2) If the exploratory puncture reveal the presence of pus, evacuate it immediately. (3) The pus being evacuated, the formation of a new collection should be prevented by frequent punctures. This practice has the advantage of preventing the effects of the accumulation of pus, and of favoring the re-union of the walls of the pocket. If it becomes necessary later to perform pleurotomy, it is not the pleural cavity that you open but an encysted pocket. (4) If the punctures be not sufficient or if they must be too frequently repeated, apply a permanent drainage-tube, avoiding the penetration of the air. (5) If you find yourself in the presence of a septic cyst that the punctures do not modify, if suddenly the pus takes on a gangrenous odor, open extensively at once. In this case only should antiseptic washes be used. (*Physician and Surgeon*, April, 1889.)

In the *Centralblatt für Chirurgie*, No. 7, 1889, an interesting case is reported by Dr. Grünbaum, of Warsaw, in which he removed with success the whole of the tenth rib on the right side, together with the corresponding transverse and articular processes of the tenth dorsal vertebra, for necrosis.

The patient, a young man, aged twenty-three, having been put under the influence of an anæsthetic, the rib was exposed by incision of the soft parts as far as the angle. The posterior part of this incision laid open a cavity of the size of an apple, which contained thin, ill-smelling pus, and surrounded the head and neck of the rib and transverse process of the tenth dorsal vertebra. The head and neck of the diseased rib having been carefully dissected away from the adherent pleura, the whole of the bone, together with adherent vertebral process, was removed without any wounding of this membrane. A cavity was now

discovered in the body of the tenth dorsal vertebra, which was occupied partly by yellow tuberculous material, partly by vascular granulations. The contents of this cavity and also the granulations on the inner surface of the abscess cavity, together with shreds of tissue and purulent clots, were then removed with the sharp spoon. Although the wound healed favorably and with but little discharge of this fluid, the patient remained feverish for a long time after the operation, but he ultimately made a complete recovery. (*London Medical Recorder*, March 30, 1889.)

The right pleural sac and portion of the dorsal spine of a young negress who had died two days before were presented at a clinic by Dr. J. C. Wilson, affording evidence of the manner in which caries of the spine may set up empyema. It was evident that there had been a purulent pleurisy, communicating with a bronchus by means of a fistulous opening, and on different occasions aspirations had removed pus. (*Philadelphia Medical Times*, December 1, 1888.)

An instrument for aspirating and irrigating the pleural cavity has been devised by Dr. Wood, of Quincy, which elicited various comments from the members of the Michigan State Medical Society. The merits and demerits of aspiration were discussed, and free incision, drainage, and resection of ribs was maintained by the Society to be the sole means of satisfying the conditions. (*Am. Lancet*, June, 1889.)

A new form of aspirator was exhibited at the Eighth German International Medical Congress, April 18, 1889, by Herr Storch, of Copenhagen. It consisted of an air-tight bottle filled with water. The tube connected with the aspirator needle opened into the upper part of the bottle, while from the lower part the water was allowed to escape slowly. In this way a vacuum was caused, and a considerable aspirating force was produced.

A new rib-cutter has been devised by Dr. Charles Denison, combining a periosteum separator and a rib-cutter in such a manner that the point could with ease be forced between the ribs lying in contact or overlapping each other, and be made to separate the periosteum from the bone for any desired dis-

tance. A mechanical joint was so fitted to the jaws of the instrument that the cutting blade could be closed with such force as easily to sever a rib of beef and sticks of wood of considerable thickness, as demonstrated by the author.

A pamphlet has recently been issued in Brussels upon anti-septic pleurotomy and the operation of Estlander, by Dr. A. Gallet. The conclusions of the author are as follows :

1. From collected observations and authenticated results the treatment of empyema can now be fixedly determined.

2. Surgical interference being indicated, pleurotomy performed according to strictly antiseptic methods is the operation to be made in all cases of empyema. The antiseptic *modus operandi* enables the surgeon to pursue and combat empyema in all its phases and complications.

3. In any case of empyema ending in the formation of a pleural cavity or of a fistula persisting and inexhaustible, subperiosteal resection of the ribs is imperatively indicated. This operation is followed by the sinking of the thoracic parietes and consequent occlusion of the cavity. It is known under the name of Estlander's operation.

4. Costal resection is susceptible of undergoing many modifications, varying according to the dimensions of the cavity. But the main and essential aim should be the mobility of the thoracic wall.

5. This mobility concomitant with sinking is due to the retractile powers of the thickened pleura.

6. Without mentioning any general indications and contra-indications, the Estlander operation should especially be resorted to when there exist costo-pleural adhesions, when the empyemic cavity is of medium dimensions, enabling the lung to perform its functions. It is contra-indicated when there are no costo-pulmonary adhesions ; when the cavity is very large, and when the lung, pushed backed into the costo-vertebral space, can no longer perform its functions.

7. The occlusion of the empyemic cavity and the complete cure following it cannot be obtained, except by the adhesion

of the costal and of the visceral pleura. This adhesion is impossible when the dimensions of the cavity extend the limit of the thoracic sinking produced by a rational resection of the ribs; hence, surgical interference in such a case goes further than the Estlander operation. The mechanism of the healing process changes. The subperiosteal resection of the ribs is being resorted to. The pleura is incised on a line parallel with the ribs, in order to allow its retractile properties to remain intact. The cavity undergoes a direct treatment, and the bottom becomes thickened with papillary formations. This surgical procedure is known as Sprengel's operation.

8. It has been suggested and recommended, after the resection, to excise the costal pleura through the whole length and breadth of the cavity, and thus to provoke a direct adhesion of the deep with the superficial tissue. The natural result of the pleural excision is to destroy its retractile properties. Hence the sinking of the thoracic parietes is thus rendered impracticable. Instead of decreasing, the dimensions of the cavity augment. Hence it is hard to understand how the superficial tissue can thus fill up the cavity in all its parts, or how a sufficient papillary formation can be obtained. The author considers this measure as superfluous. It is known as Schede's operation.

9. In the purulent interlobular pleurisy, surgical interference may go still further than in the Sprengel operation. Subperiosteal resection of the ribs is effected. The pleura is incised; the lung is also incised. This is followed by the draining of the interlobar cavity. This operation is called "*pneumotomy*."

10. However brilliant may be the results of both the Estlander and the Sprengel operations, we have every reason to hope that these operations shall become less and less frequent, through the success of pleurotomy performed according to strictly antiseptic precautions. The progress thus obtained will be of great importance. The art of rendering an operation unnecessary is more valuable and far more creditable than that of performing it well.

The foregoing summary of the advances in thoracic surgery indicates great improvement in the treatment of abscesses of the lungs and pleural cavity. Being a record of facts, each can judge for himself what may be best suited to the peculiarities of a given case. It is, however, presented without comment, for the consideration of the members of the profession who may be called upon to adopt measures for the relief of this class of cases.

